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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,099	07/26/2001	Norio Oku		9770

26021 7590 12/03/2002

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EXAMINER

DI GRAZIO, JEANNE A

ART UNIT PAPER NUMBER

2871

DATE MAILED: 12/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,099

Applicant(s)

OKU ET AL.

Examiner

Jeanne A. Di Grazio

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Priority to Japanese Patent Application No. 2000-229575, July 28, 2000 is claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsubota et al. (USPN 5,677,749) in view of Sunaga et al. (USPN 5,942,066).

Per claim 1: Tsubota et al. has the step of disposing a sealing member along an outer peripheral region of a display area between a pair of substrates to form a display panel body [Figure 4, Ref. Item 4]. Tsubota et al. has a step of disposing an elastic sheet / buffering layer on an outer surface of one of a pair of substrates [Figure 30, Ref. Item 311]. Tsubota et al. has a buffering layer / elastic sheet with a cut-out portion corresponding to an LC panel [Col. 4, Lines 13-15 and Figure 10]. Tsubota has a step of curing a sealing member (the sealing member made of a polymerization initiator activated by UV radiation and a thermally activated material, Col. 13, Lines 17-23) by application of a pressure from an outer surface of a display panel body to between substrates through a buffer plate [Figure 30].

Tsubota et al. does not appear to have the step of heating and pressing substrates; however, Sunaga et al. does have the step of heating and pressing substrates [Col. 2, Lines 39-41]. It would have been obvious to one of ordinary skill in the art at the time the invention was

Art Unit: 2871

made to modify Tsubota et al. in view of Sunaga et al. to reduce curing treatment time of a sealant [Sunaga et al. at Col. 2, Line 26-28] and reduce the number of manufacturing steps.

Per claim 2: Tsubota et al. has a plurality of display panel regions to be formed into liquid crystal display panels [Figures 7 and 10] and a seal material disposed along an outer peripheral region of an area to be formed into a display area of each of the panel regions [Figure 7]. Tsubota et al. also has a buffering layer including an opening formed at a position corresponding to an area of each panel region [Figure 11]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have multiple display regions for manufacturing ease.

Per claim 3: Tsubota et al. has a step of curing a seal material. Tsubota et al. does not appear to have a step of simultaneously heating and curing through the application of heating plates disposed sandwiching a buffer plate disposed at each outer surface of a pair of substrates; however, Sunaga et al. does disclose a prior art step of heat and pressure with a heat plates [Col. 4, Line 31 and Figure 1]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tsubota et al. in view of Sunaga et al. for the purpose of uniform pressure distribution [Col. 4, Lines 28-30] and for uniformly transmitting heat [Col. 4, Lines 31-32].

Per claim 4: Tsubota et al. does not appear to have a dummy substrate disposed between at least a lower plate of a pair of heating plates and buffer plate disposed under a display panel body; however, Sunaga et al. does have an electrode layer between heat plates and a buffer plate under a display panel body [Figure 1]. Tsubota et al. does not appear to have a lower buffer plate, display panel body, and an upper buffer plate stacked on a dummy substrate in order from

Art Unit: 2871

the bottom in an aligned manner and introduced together with a dummy substrate to a space between a pair of heating plates; however, Sunaga et al. does have such a structure [Figure 1]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tsubota et al. in view of Sunaga et al. for uniform heat and pressure distribution.

Per claim 5: Tsubota et al. has a plurality of panel regions to be formed into liquid crystal display panels, and a seal material disposed in each of the panel regions in an outer peripheral region of an area to be formed into a display area [Figure 7]. Tsubota et al. has a buffering layer including an opening formed at a position corresponding to an area of each display panel region [Figure 25]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include said elements for manufacturing ease.

Per claim 6: Tsubota et al. has spacers only in the seal region for setting the distance between substrates [Col. 4, Lines 2-5]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tsubota et al. to include no spacers for defining a gap between substrates in a display area so as to not interfere with display quality and performance.

Per claim 7: Tsubota et al. only has spacers in a seal region as previously noted. Tsubota et al. does not appear to have the step of heating and pressure applied to substrates through heat plates sandwiching at least a buffer plate disposed at one or more outer surfaces of a pair of substrates; however, Sunaga et al. does have such steps. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tsubota et al. in view of Sunaga et al. to reduce cure time and reduce the number of manufacturing steps.

Per claim 8: Tsubota et al. has a buffer plate for applying pressure to a display panel body [Figure 30, Ref. Item 311]. Tsubota et al. has a thermosetting seal material disposed in an outer peripheral region of a display area between a pair of substrates [Figure 4, Ref. Item 4]. Tsubota et al. has an opening in the buffering layer formed at a position overlapping an area to be formed into the display area of a display panel body [Figure 10]. Tsubota et al. does not appear to have a heat application to a thermosetting seal material; however, Sunaga et al. does have a step of curing a sealing agent with heat [Col. 2, Lines 39-41]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tsubota et al. in view of Sunaga et al. because heating is a common means for curing a thermosetting material.

Per claim 9: Tsubota et al. has a display panel body including a plurality of panel regions to be formed into display panels [Figure 25] and a thermosetting seal material disposed in each of the panel regions in an outer peripheral region of an area to be formed into a display area [Figure 7] and an opening formed at a position overlapping the area to be formed into a display area of each panel region [Figure 10]. The same motivation applies as noted previously with respect to claim 5.

Per claim 10: Tsubota et al. has spacers only in the seal material for defining a substrate gap as previously noted. The same motivation with respect to claim 6.

Art Unit: 2871

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (703)305-7009.

The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-8741 for regular communications and (703)746-8741 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Jeanne Andrea Di Grazio

Robert Kim, SPE

JDG

November 26, 2002


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